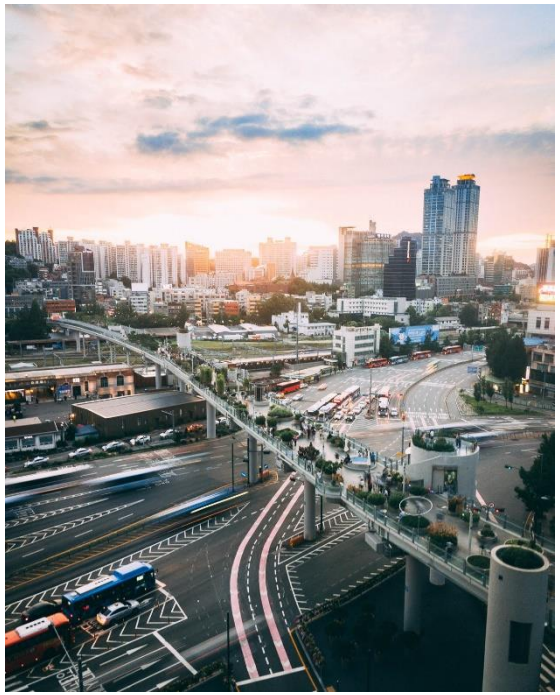
Lives saved through road safety collaboration between India and Sweden

SITIS' Vision:

"To leverage the know-how of India and Sweden to accelerate progress and deployment of safe & sustainable transport solutions and actionable policies, contributing to significant progress of Indian transport system"



Key facts about SITIS

the Sweden-India Transport Innovation and Safety Partnership

- **Collaboration agreement**: Signed in conjunction to the UN conference on road safety in Stockholm February 2020.
- **Aim**: Be a prominent platform for applied research and innovation in the area of safe and sustainable transport.
- **Partners**: Volvo Group, Autoliv, Ericsson, Manipal Hospital, Altair, Saab Group, Tech Mahindra, India Institute of Science (IISc), Transportation Research and Injury Prevention Program, Indian Institute of Technology Delhi (TRIPP, IITD), Chalmers University of Technology (SAFER), RISE, ARAI, VTI

SITIS

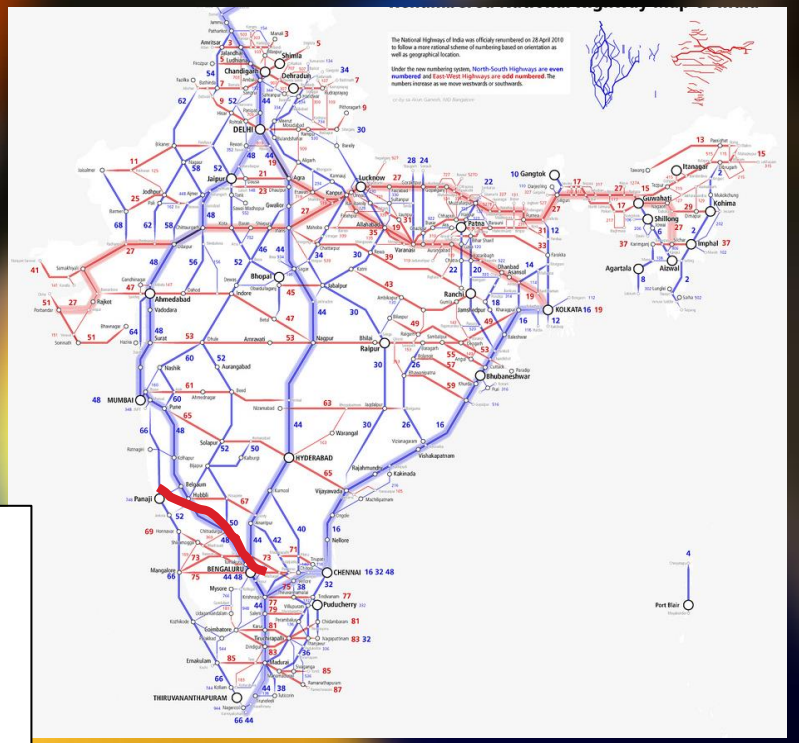
Overview of first project and new proposals

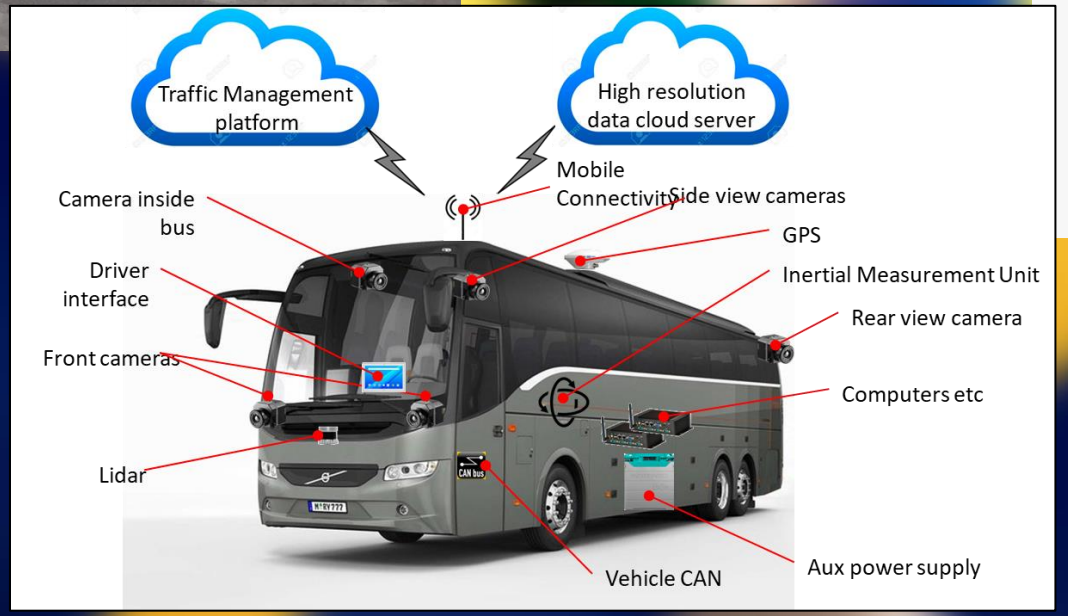
John-Fredrik Grönvall

Three projects….

- Project #1: Safe and Secure Transport Corridors in India
- Project proposal #2: Framework for Indian Road Accident Data Acquisition System
- Project proposal #3: Emergency Responce service

Project #1
- Safe and Secure Transport Corridors in India





Partners

Autoliv

Altair

ARAI
Progress through Research

CHALMERS
UNIVERSITY OF TECHNOLOGY

ERICSSON

Indian Institute of Technology Delhi

Indian Institute of Science
भारतीय विज्ञान संस्थान

Manipal Hospitals
LIFE'S ON

RI.SE

SAAB

Tech Mahindra

VOLVO
VOLVO GROUP

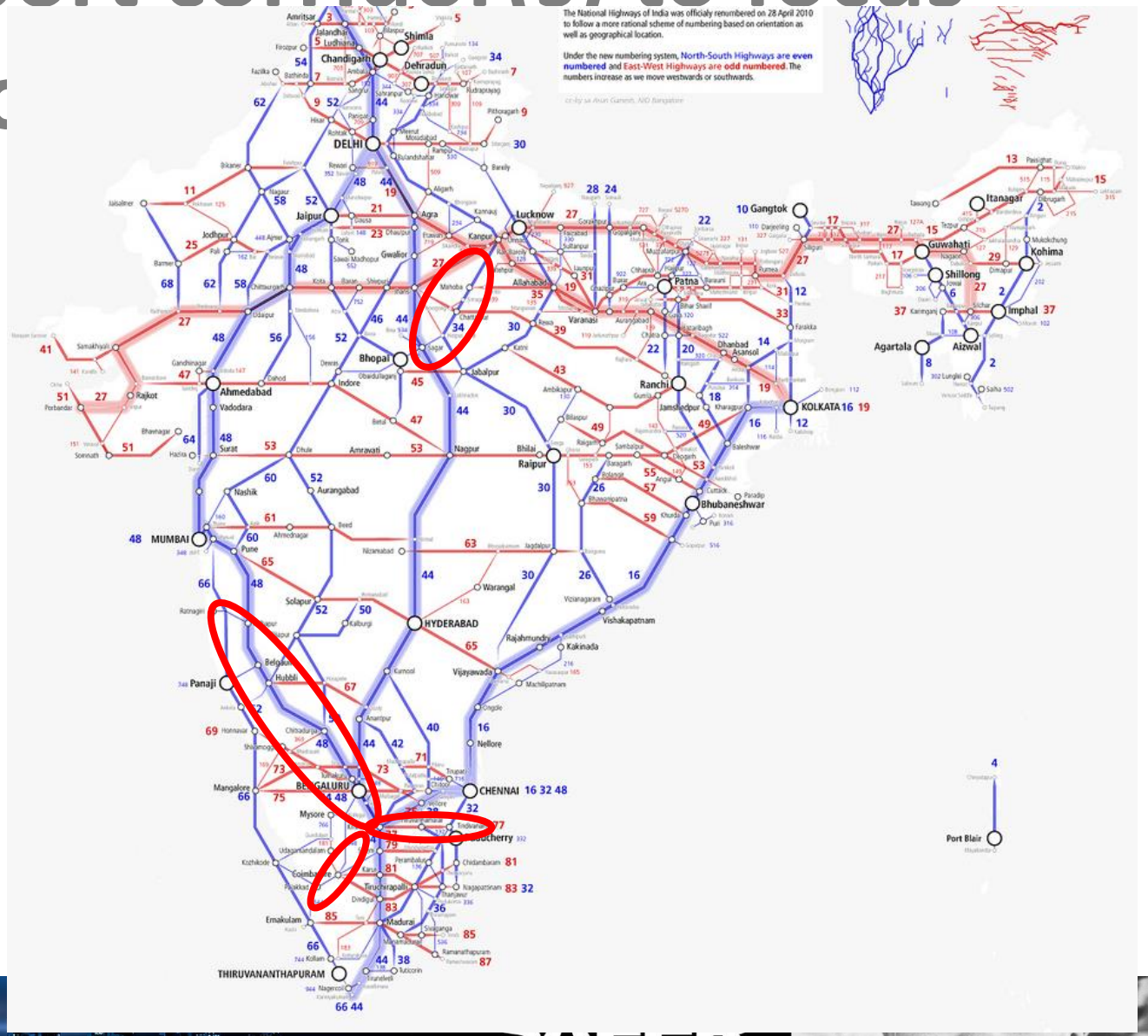
vti

TRAFIKVERKET
VISION ZERO ACADEMY

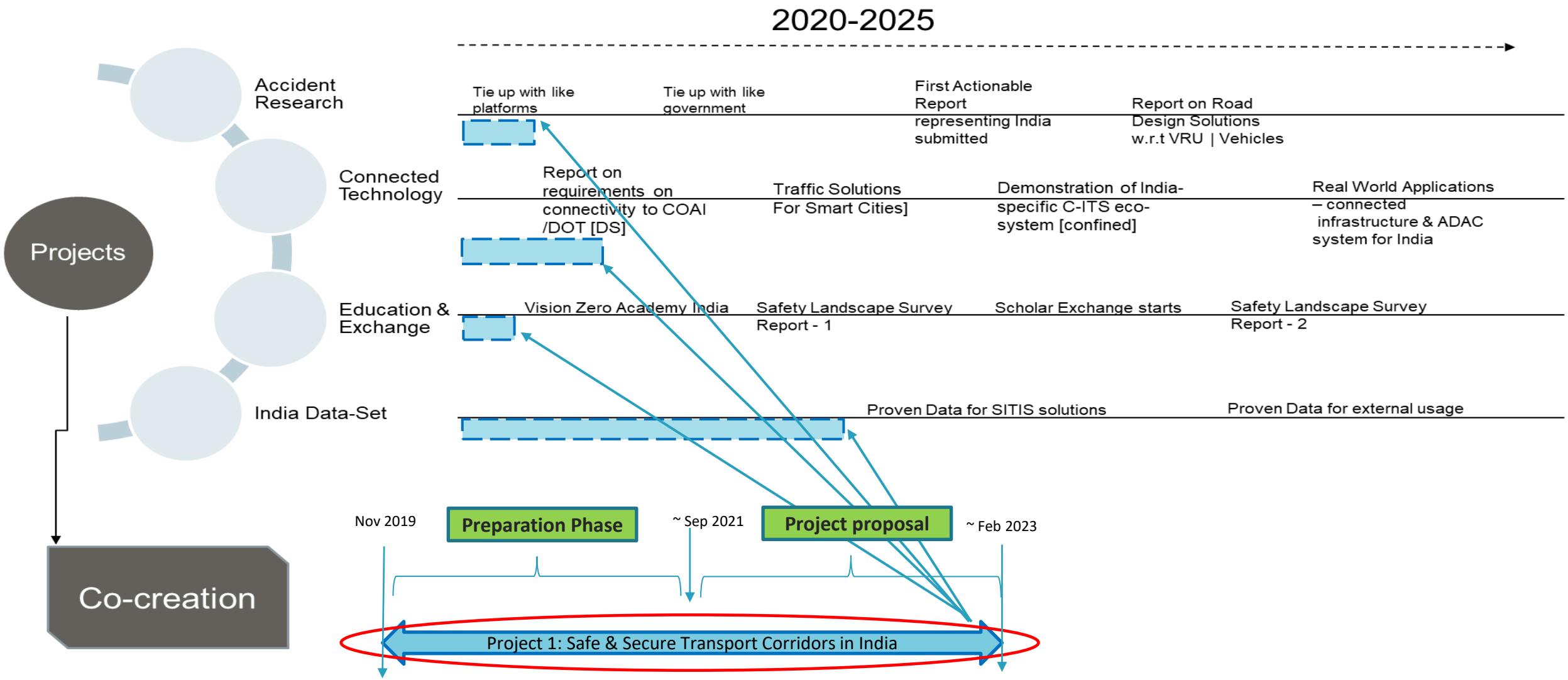
The partnership is supported by Niti Aayog

First potential transport corridor(s) to focus c

- **Bangalore corridor:**
  - **Bangalore to Mysore 120 km**
  - **Bangalore to Chennai 350 km**
  - **Bangalore to Mumbai 1000 km**
  - **Karnataka State Road Transporation Corporation runs many buses. Likely to be open to this experimentation**
  - **Its Bangalore metro transporation provider BMTC is planning to deploy camera-enabled devices on a 22 km bus priority lane stretch**
- **Delhi corridor:**
  - **Delhi to Jaipur 280 km**



Project Contribution to SITIS Roadmap



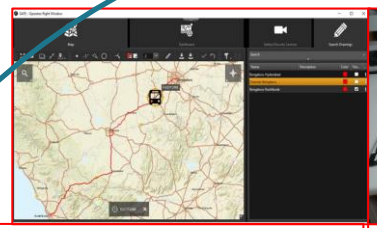
Research Questions

RQ1: What are the safety characteristics of coach bus transportation for the given corridors? (City + Highway)	RQ2: How can relevant data be collected, stored and analysed in a cost-efficient manner?	RQ3: What are suitable services related to efficient transport solution, security and safety of passengers and drivers and what are the prerequisites for implementation of these services?
A. What are the factors that affect drowsiness/fatigue?	A. Which data need to be collected, and is any prioritization needed?	A. What are requirements on connectivity solutions in terms of digital infrastructure?
B. What are the safety effects of and attitudes towards control systems for impaired driving?	B. Which data is needed to identify how and when drivers might be at high risk for dangerous driving due to impairments	B. What are suitable services related to emergency management (incl. accident avoidance, emergency response planning and accident handling)?
C. What are the safety effects of and attitudes towards: HMI messages such as warnings?	C. How can the drivers and the bus be equipped in order to measure driver state, the coach-drivers situation using e.g. physiological parameters?	
D. What are safety and security issues related to other road users (e.g., pedestrians)?	D. What are the most suitable tools for data collection, storage and analysis?	
E. How can the rescue time in case of an accident be optimized?		
F. What kind of technology or automation increases confidence on safety and reduce mishaps?		
G. What constitutes “safe” driving for a coach bus?		

SSTCI : Mile Stones & Timeline

M1.1 : Kick-off

M3.2 : Relevant measures and performance indicators specified
M3.3 : Analysis methods specified for each research question



M2.1 : Completed litterateur review of accidents and road user behaviour
M4.2 : Specified and selected tools for data analysis
M5.2 : Data collection platform installed in the fleet

M7.1 : Demonstration / showcase in India

M7.2 : Final report published online

M6.2 : **Data collection process, Data set, research scientific papers**

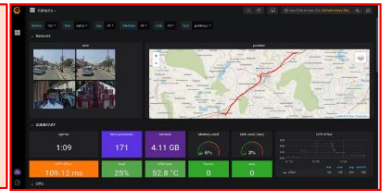
Jan 2022 — April 2022 — Aug 2022 — Nov 2022 — Feb 2023 — June 2023

2 3 4 5 6 7 8 9 1 0 11 12 13 14 15 16 17 18

M3.1 : Relevant use cases and research questions specified/refined

M2.2 : Derived recommendations for data collection procedure in India
M4.1 : Specified and selected tools for various data collection and storage
M5.1 : Pre-test conducted, and insights documented

M5.3 : Test conducted with fleet operating in its regular environment



M4.3 : A scientific paper on the data collection platform
M6.1 : Data analysis completed for all three research question areas

SAFER VEHICLE AND TRAFFIC SAFETY CENTRE AT CHALMERS

SITIS

Project #2-

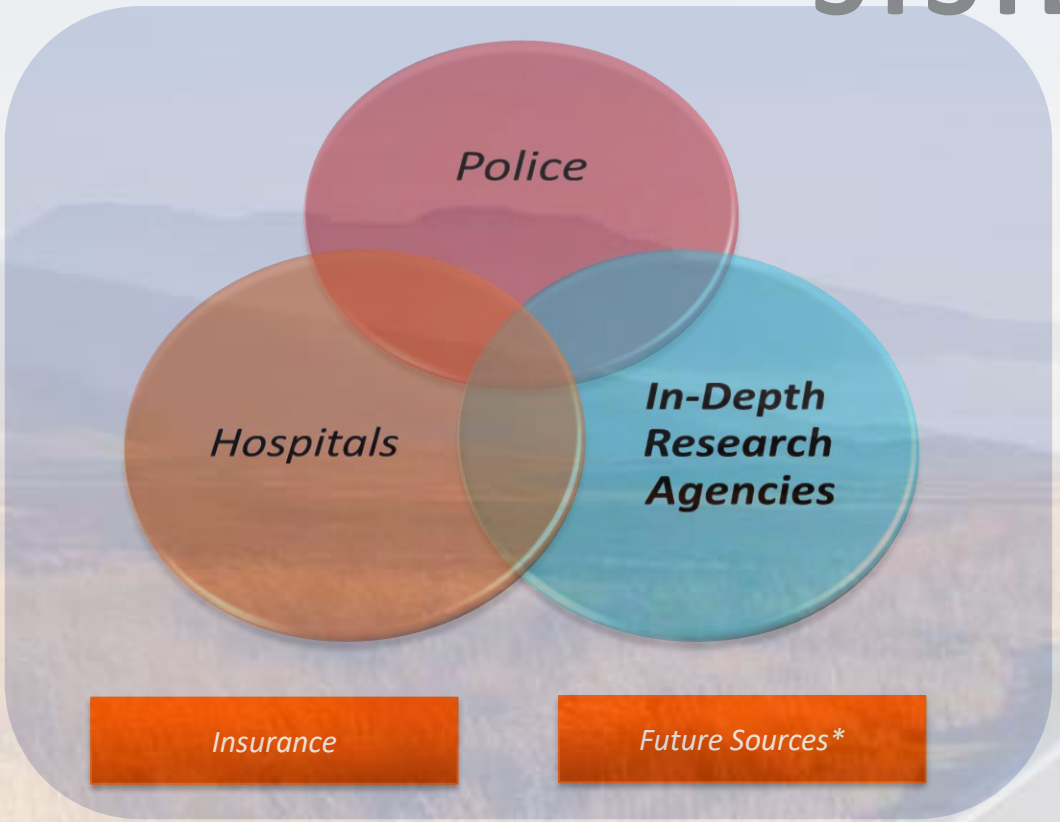
Develop, Standardize & Demonstrate A Framework for Indian Road Accident Data System (IRADS)

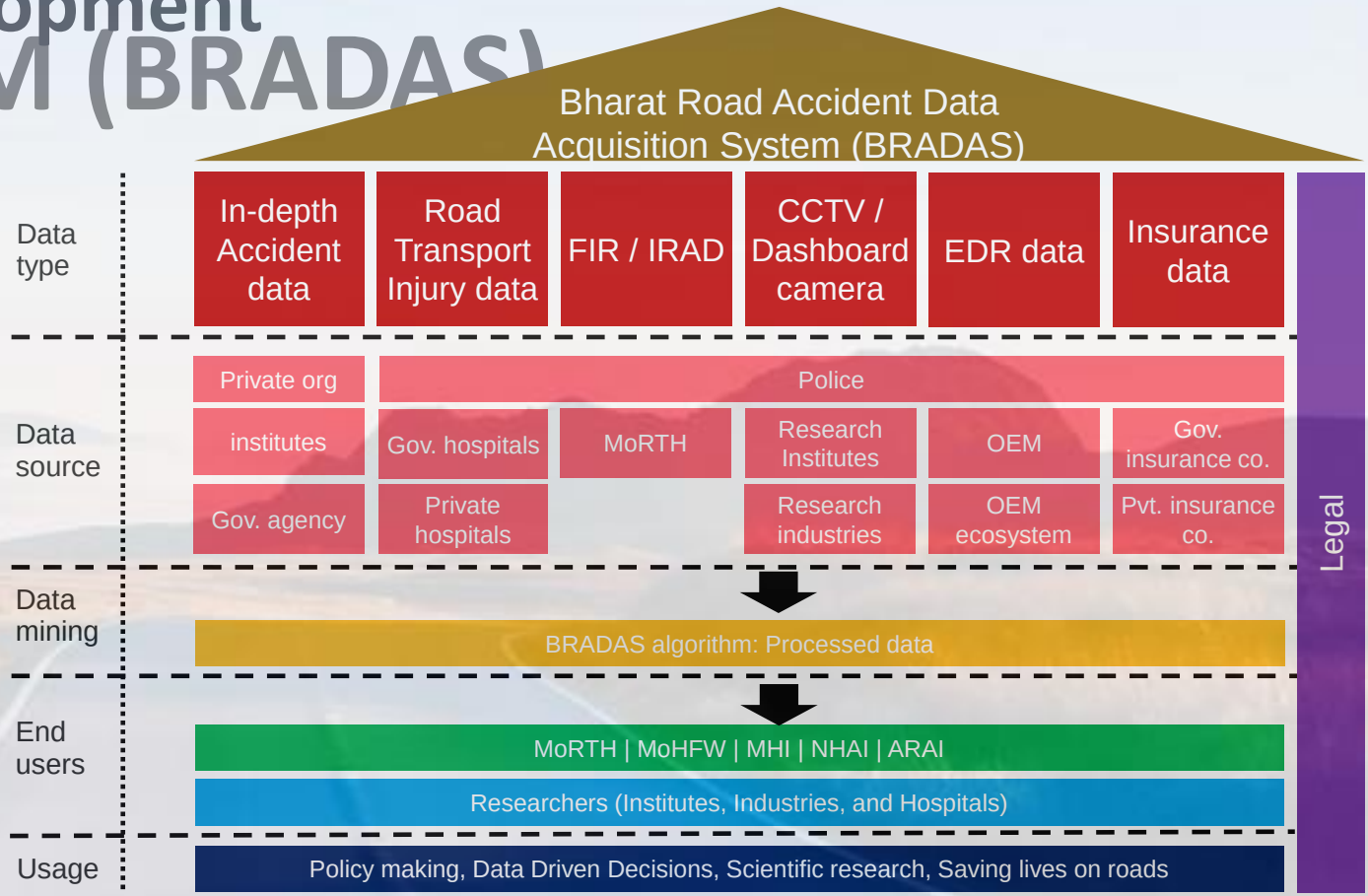
The objective

- To bind various data sources related to road accidents
- To build a framework to collate identified details from various sources
  - traffic police,
  - medical experts (physicians), and
  - an in-depth database (researchers).
  - And possibly futuristic sources such as CCTV videos, insurance data and EDR/CAN data.
- Thus increasing the value and the quality of the data.
- To demonstrate the framework through a pilot implementation and demonstrative analysis

BHARAT ROAD ACCIDENT DATA ACQUISITION SYSTEM (BRADAS)

Vision for Framework Development





* CCTV, Traffic Management System data, Even Data Recorder(EDR)

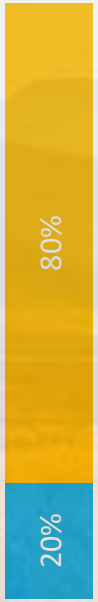
Framework Source : Autoliv

BRADAS framework development:

Proposal: Year wise phases of the SITIS project 2

Timeline of the project

Effort Share (in PM's)



Driven by India

Support from Sweden

Collaboration

- *Ministries-SITIS- Potential Stakeholders*

Current Practices & Data Integration

- *Identify the gaps*
- *Context for the framework*

BRADAS Framework Development

- *Prerequisites & Data Framework*
- *Development and Validation*

Pilot Study and Report

- *BRADAS with Live Data*
- *Report and Workshops*

Award mature BRADAS framework

- *MoRTH – PAN India Deployment*
- *Other ministries – Dashboards for Implementation*

SAFER
VEHICLE AND TRAFFIC SAFETY CENTRE AT CHALMERS

Project proposal #3:
Emergency Responce service

MARS Manipal Ambulance Response Service

Manipal Ambulance Response Service

- Operate a fleet of 21 of ambulances in Bangalore city
- Mix of ACLS(Advanced Cardiac Life Support) and BLS (Basic Life Support) Ambulances
- ACLS Ambulance: Ventilator/Defibrillator with in-built ECG machines, syringe pump and critical medicines
- BLS Ambulance: Multi-para Monitors with inbuilt ECG machines / Suction Apparatus / Glucometer etc.,
- GPS tracked with live video feeds for real time patient monitoring by Emergency Response Centre Physician

Four steps to improve: